

Claims

- [c1] 1. A data processing system for controlling corrosion, comprising,
 - a) means for data processing including means for data collection for storing data in a data base and means for producing reports from said stored data;
 - b) said means for producing reports includes means for producing summary recommended work reports summarizing recommended work for controlling corrosion at the enterprise, structural, or element, levels.
- [c2] 2. The system of claim 1, including means for producing log on screens at said enterprise, structure, or element level, for summarizing recommended work or costs, at said respective enterprise, structure, or element, levels.
- [c3] 3. The system of claim 1, including means for producing log on screens at said enterprise, structure, or element, levels, with links to said recommended work reports at said respective levels.
- [c4] 4. The system of claim 1, including means for producing log on screens at said enterprise, structure, or element level summarizing costs and with links to recommended

work reports at said respective levels.

- [c5] 5. The system of claim 1, wherein said means for producing summary work reports includes means for producing for at least one said summary work report, listing the recommended work in at least one time defined forecast, or a report of the cost of deferring any part of said recommended work.
- [c6] 6. The system of claim 5, wherein said means for producing a report listing said recommended work in at least one time defined forecast, includes means for producing a plurality of said time defined forecast reports or separate respective time periods.
- [c7] 7. The system of claim 1, wherein said means for producing summary recommended work reports at said element level includes means for producing at said elemental level, at least a coating system performance report, or optimum work schedule report, or deferred work report, or completed work report.
- [c8] 8. The system of claim 1, wherein said means for storing data includes means for storing data indicative of condition evaluation of at least one element, and of respective corrosion control action for a respective element at a defined degradation level.

- [c9] 9. The system of claim 1, wherein said means for storing data includes means for storing data indicative of corrosion control standards for costs, actions, or expected service life.
- [c10] 10. The system of claim 7, wherein said means for data collection includes means for storing element data indicative of a respective element and of said respective element's total area, or event type, or date or condition grade, or percentage repair area, or coating system, or critical inspection items, or digital photographs.
- [c11] 11. The system of claim 10, wherein, said means for producing said summary recommended work reports at said element level, include means for using at least some of said element data and at least some of said data indicative of corrosion control standards for producing budget estimates or maintenance actions.
- [c12] 12. The system of claim 1, wherein said means for producing summary reports, includes means for producing structure reports by including at least a plurality of elements in said respective structure.
- [c13] 13. The system of claim 9, wherein said means for storing data indicative of corrosion control standards, includes means for storing data indicative of an identifier

and one or more standards of surface preparation requirements, primer coat, second coat, third coat, finish coat, installed cost, touch-up costs, refresh costs, restore costs, specific use identifier, initial condition factor, or degradation rate factor.

- [c14] 14. The system of claim 9, wherein said means for producing summary recommended work reports, includes means for producing an optimum maintenance scheduling report, responsive to at least one selected element, selected acceptable condition grade, condition grade expected in relation to the related installed coating system for the respective element, providing actions or budget estimates.
- [c15] 15. The system of claim 7, wherein said means for producing summary recommended work reports, includes means for producing a material performance report for comparing the performance of an applied corrosion control system with expected performance for said applied system and including means for combining element data for at least one selected element, said element data including actual condition grade data, with data indicative of expected performance for said element with said applied system.
- [c16] 16. The system of claim 7, wherein said means for pro-

ducing summary recommended work reports includes means for producing a cost of deferring work report including data indicative of at least one selected element, a selected deferral period, data indicative of the expected performance of a corrosion control system applied to said selected element, means responsive to said element data and said expected performance data for calculating the future costs of deferred maintenance.

- [c17] 17. The system of claim 7, wherein said means for producing summary recommended work reports includes means for producing a completed work report responsive to element data indicative of the element name, and a completed event type or completed event date or costs of completion.
- [c18] 18. The system of claim 17, wherein said means for producing a summary recommended work report includes means for using at least some of said element data and at least some of said data indicative of corrosion control standards for producing budget estimates for a selected element and for comparing said budget estimates with said costs of completion for said selected element.
- [c19] 19. The system of claim 1, wherein said means for producing reports includes means for producing a critical inspection attribute report; said means for producing

said critical inspection action report including means for using element data indicative of critical inspection items, maintenance actions performed or completed, for at least one element.

20. The system of claim 14, where said means for producing said optimum maintenance scheduling report includes means for using for said selected element, condition grades acceptable before maintenance is to be performed and wherein said condition grades expected is derived from data indicative of said coating system installed for said selected element.

[c20] 21. The system of claim 1, wherein said means for producing said summary recommended work reports includes means for maintenance priority reports including means for using element data for at least one selected element, indicative of priority, refresh or restore costs, and means for determining the priority for maintenance for said selected element based on a designated allocation of maintenance budget.

[c21] 22. The system of claim 7, including means for producing alarms responsive to said coating system performance report, includes means.

[c22] 23. A method for controlling corrosion, comprising the steps of,

a) the step of data collection for storing data in a data base and the step of producing reports from said stored data;

b) said step of producing reports includes the step of producing summary recommended work reports summarizing recommended work for controlling corrosion at the enterprise, structural, or element, levels.

- [c23] 24. The method of claim 23 including the step of producing log on screens at said enterprise, structure, or element level, for summarizing recommended work or costs, at said respective enterprise, structure, or element, levels.
- [c24] 25. The method of claim 23, including the step of producing log on screens at said enterprise, structure, or element, levels, with links to said recommended work reports at said respective levels.
- [c25] 26. The method of claim 23 including the step of producing log on screens at said enterprise, structure, or element level summarizing costs and with links to recommended work reports at said respective levels.
- [c26] 27. The method of claim 23, wherein said step of producing summary work reports includes the step of producing for at least one said summary work report, listing

the recommended work in at least one time defined forecast, or a report of the cost of deferring any part of said recommended work.

- [c27] 28. The method of claim 23, wherein said step of producing a report listing said recommended work in at least one time defined forecast, includes the step of producing a plurality of said time defined forecast reports or separate respective time periods.
- [c28] 29. The method of claim 23, wherein said step of producing summary recommended work reports at said element level includes the step of producing at said elemental level, at least a coating system performance report, or optimum work schedule report, or deferred work report, or completed work report.
- [c29] 30. The method of claim 23, wherein said step of storing data includes the step of storing data indicative of condition evaluation of at least one element, and of respective corrosion control action for a respective element at a defined degradation level.
- [c30] 31. The method of claim 23, wherein said step of storing data includes the step of storing data indicative of corrosion control standards for costs, actions, or expected service life.

[c31] 32. The method of claim 31, wherein said means for storing data includes the step of storing element data indicative of a respective element and of said respective element's total area, or event type, or date or condition grade, or percentage repair area, or coating system, or critical inspection items, or digital photographs, and said step of producing said summary recommended work reports at said element level, include the step of using at least some of said element data and at least some of said data indicative of corrosion control standards for producing budget estimates or maintenance actions.

[c32] 33. A corrosion control system, comprising, a data processor including a data base; said data base adapted to store data indicative of a facility and elements within said facility subject to corrosion; said data base adapted to store data indicative of corrosion control standards for controlling corrosion on said elements; said data processor adapted to access said data in said data base to produce data indicative of reports of corrosion control plans for said elements.

[c33] 34. The system of claim 33, wherein said data base is adapted to include data indicative of at least one structure comprising a plurality of elements or an enterprise

comprising a plurality of structures and said data processor is adapted to produce at least one summary recommended work report summarizing recommended work for controlling corrosion at the enterprise, structural, or element, level.

- [c34] 35. The system of claim 34, wherein said data processor is adapted to produce log on screen reports summarizing recommended work or costs, at said respective enterprise, structure, or element, levels.
- [c35] 36. The system of 35, wherein said data processor is adapted to produce said log on screens with links for accessing linked recommended screen reports at the element, structure or enterprise level.
- [c36] 37. The system of claim 36, wherein said data processor is adapted to produce said linked recommended screen reports in a summary recommended work report, or in a forecast for recommended work over a defined period of time or in a report of the cost of deferred work.
- [c37] 38. The system of claim 33, wherein said data base is adapted to store data indicative of corrosion control standards for surface preparation requirements, primer coat, second coat, third coat, finish coat, installed cost, touch-up costs, refresh costs, restore costs, specific use

identifier, initial condition factor, or degradation rate factor.

- [c38] 39. The system of claim 38, wherein said data processor responsive to said data indicative of said elements and said corrosion control standards, is adapted to produce data indicative of at least one optimum maintenance scheduling report including budget estimates or scheduled actions.
- [c39] 40. The system of claim 33, wherein said data processor responsive to said data indicative of said elements and said corrosion control standards is adapted to produce data indicative of at least one material performance report comparing the performance of an applied corrosion control system with expected performance for said applied corrosion control system.
- [c40] 41. The system of claim 33, wherein said data processor adapted to access said data in said data base to produce data indicative of reports of corrosion control plans for said elements, is adapted to produce data indicative of cost of deferring work including data indicative of at least one selected element, a selected deferral period, data indicative of the expected performance of a corrosion control system applied to said selected element, and responsive to said element data and said expected

performance data, data indicative of the future costs of deferred maintenance.

- [c41] 42. The system of claim 33, wherein said data base is adapted to store element data indicative of a respective element and of said respective element's total area, or event type, or date or condition grade, or percentage repair area, or coating system, or critical inspection items, or digital photographs.
- [c42] 43, The system of claim 39, wherein said data processor adapted to access said data in said data base indicative of at least one corrosion control standard for at least one selected element, is adapted to produce data indicative of a maintenance priority report, responsive to said element and standard data.
- [c43] 44. The system of claim 39, wherein said data processor is adapted to access said data indicative of said at least one performance report and responsive to said performance report data, produce data indicative of alarms.